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## NOTES ON AUSTRALIAN FLIES OF THE FAMILY CONOPIDAE

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This paper is based on material from the U.S. National Museum (USNM) and the British Museum (Natural History)—(BMNH), made available through the interest and courtesy of C. W. Sabrosky, H. Oldroyd, and R. L. Coe. Altogether, 8 genera (1 of which is new) and 26 species (12 of which are new) are represented in the material of both of these institutions. The material from the U.S. National Museum is mainly from the Malloch collection, and most of the specimens were apparently collected by J. D. Bridwell at Sydney, New South Wales. This collection contained the first species of *Thecophora* (= *Occemyia*) described from the Australasian Region in 1955 (see *T. australiana*, p. 76).

### Genus *Conops* Linné

*Conops* Linné, *Systema naturae*, ed. 10, p. 604, 1758.

### Key to the Australasian Species of *Conops* (Subgenus *Asiconops*)

1. Abdomen black, often with reddish areas, and with diffuse yellow or gold pollinose areas . . . . . 2
- Abdomen dull black, with distinct reddish gold pollinose areas on the second and sixth segments . . . . . 9

2. Abdomen black, with definite reddish areas . . . . . 3  
Abdomen predominantly black; may have narrow reddish areas on margins or apex. . . . . 6
3. Antenna rufous, may be partly brown. . . . . 4  
Antenna black . . . . . 5
4. Black frontofacial mark. Wing with distinct dark apical area (India to Java, ♂ ♀) . . . . . *nubeculosus* Bigot<sup>1</sup>  
No black frontofacial mark. Wing slightly darker apically, but not distinctly (northeastern Australia, ♂ ♀). . . . . *australianus*, new species
5. Theca black. Only first tergite entirely black in female (eastern Australia, ♂ ♀) . . . . . *seminiger* Meijere  
Theca reddish yellow. First and second tergites black in female (Australia, New Guinea, ♀) . . . . . *demeijerei* Kröber<sup>2</sup>
6. Antenna rufous . . . . . 7  
Antenna black . . . . . 8
7. No pollen on third and fourth tergites. No black at base of facial keel (India to Java, ♂ ♀) . . . . . *nubeculosus* Bigot<sup>3</sup>  
Pollinose areas on third and fourth tergites. Black at base of facial keel (New Guinea, ♂) . . . . . *aureofuscus* Camras<sup>4</sup>
8. Front mainly yellow. Abdomen thinly yellow pollinose except on third and fourth segments (Queensland, ♀). . . . . *nigrescens*, new species  
Front black. Abdomen gold yellow pollinose from third segment to apex (New Guinea, ♂ ♀) . . . . . *metaxanthus* Walker<sup>5</sup>
9. Front and vertex rufous (southern and western Australia, ♂ ♀).  
Front and vertex black (New South Wales, ♀) . . . . . *satanicus* Bigot  
Front and vertex black (New South Wales, ♀) . . . . . *thoracicus* Kröber<sup>6</sup>

***Conops (Asiconops) australianus*, new species**

DESCRIPTION: Male: Length 14 mm. Vertex, front, and face yellow. Reddish in front of vertex, and partially on face and cheeks. Blackish at base of antennae and base of keel. Gold pollinose on orbits, face, cheeks, and lower facial grooves. Occiput reddish above, yellow below; gold pollinose below vertex. Antennae rufous, more yellowish on lower half of third segment and arista. Black on apex of arista. First antennal segment four times as long as wide. Second segment two times length of first. Third segment as long as first. Second segment of arista not definitely produced. Proboscis yellow, black at base and apex, nearly two times length of head.

Thorax rufous, black on dorsum in three fused stripes. Black on lower postnotum and part of the pleura. Thorax with gold pollinose areas on dorsum, upper postnotum, metapleura, and parts of pleura.

<sup>1</sup> *Conops nubeculosus* Bigot, Ann. Soc. Ent. France, ser. 6, vol. 7, p. 36, 1887.

<sup>2</sup> *Conops seminiger* var. *de Meijerei* Kröber, Ann. Mag. Nat. Hist., ser. 11, vol. 4, p. 593, 1939.

<sup>3</sup> See footnote 1.

<sup>4</sup> *Conops aureofuscus* Camras, Treubia, vol. 24, p. 107, 1957.

<sup>5</sup> *Conops metaxantha* Walker, Proc. Linn. Soc. London, vol. 7, p. 225, 1864.

<sup>6</sup> *Conops thoracicus* Kröber, Ann. Mag. Nat. Hist., ser. 11, vol. 4, p. 597, 1939.

Coxae and legs mainly rufous, gold pollinose on coxae and tibiae. Tarsi mainly black. Pulvilli and claws, except black tips, yellow. Wings yellowish hyaline, brown between first and third veins and vena spuria and along fifth vein. Brown pattern slightly darker apically. Calypters yellow. Halteres rufous, yellow on stem, brownish at base.

Abdomen rufous, black at base of first segment, margin of first and second segments, on all of third and fourth segments, and part of fifth segment. Gold pollinose over most of the segments, more dense on posterior margin and sides of first and second segments and on the fifth and sixth segments. Genitalia rufous, partly black.

Female: Length 14 mm. Similar to the male. Reddish areas on head darker. No black on arista. Third and fourth segments of abdomen less pollinose, blacker. Seventh segment rufous. Theca black, slightly longer than wide.

VARIATION (in paratypes): No black on base of facial keel, and a fine blackish midline on the front in one male. Antennae blackish on third segment and arista in one specimen. In one female that is teneral, the middle black stripe on the dorsum of the thorax is missing. The face and cheeks of this specimen are black and the yellow areas of the head mainly dark rufous. Theca and parts of the third and fourth segments of the abdomen are rufous.

TYPES: Holotype, male, USNM 64916. Allotype (on same pin), Cairns, northeastern Queensland, A. P. Dodd. Paratypes, Australia: 1 male, author's collection ex USNM, Oct. 13, 1931, A. W. Lopez (emerged from Australian wasp); 1 female, USNM, A. W. Lopez (emerged from Australian wasp); 1 with abdomen missing, USNM, A. W. Lopez (emerged from Australian wasp). The host in Australia, according to label data, is *Campsomeris tasmaniensis* or *radula*.

REMARKS: Kröber's record of *nubeculosus* from Cape York, probably belongs to this species. Kröber noted that his specimen lacked the dark apical area in the wing pattern of *nubeculosus*.

#### *Conops (Asiconops) seminiger* Meijere

*Conops seminigra* Meijere, Tijdschr. Ent., vol. 53, p. 162, 1910.

The specimen in the U.S. National Museum is rather small, the length being 13 mm. Kröber in his 1939 key (Ann. Mag. Nat. Hist., ser. 11, vol. 4, pp. 594-607), uses the female characters to distinguish *demeijerei* Kröber. It is possible that *demeijerei* is the true female of *seminiger* and that the female described by Meijere represents another species.

MATERIAL EXAMINED: Sydney, New South Wales, Bridwell collection, 1 male, USNM; New South Wales, A. R. Wallace, 1 male (determined by Kröber), BMNH.

*Conops (Asiconops) nigrescens*, new species

DESCRIPTION: Female: Length 11.5 mm. Head yellow, dark rufous on upper front and vertex. Yellow pollinose on face, cheek, orbits, and postvertical stripe. Black narrow midline on front and at base of facial keel. Antennae black, dark reddish at margins. First segment four times as long as wide. Second segment about two times length of first. Third segment missing. Proboscis black, reddish in the middle, nearly two times length of head. Occiput dark reddish black.

Thorax black, dark reddish on humeri, metapleura, and margins of pleura. Faintly yellow pollinose on dorsum, postnotum, and metapleura. Faintly white pollinose on pleura. Coxae dark reddish, partly black, white pollinose. Legs black, rufous on trochanters, apical ventral third of femora, basal half of tibiae, and partially on posterior tarsi. Pulvilli, and claws except black tips, yellow. Wings yellowish hyaline. Brown pattern between first and third veins and vena spuria and along fifth vein. Pattern darker apically. Calypsters yellow. Halteres dark yellow, dark brown at base.

Abdomen black, narrow reddish margins on all segments becoming lighter and more distinct on the fourth to sixth segments. Seventh segment and genitalia mainly reddish. Thinly yellow pollinose except on third and fourth segments. Theca black, about as long as wide.

TYPE: Holotype, female, BMNH, Redlynch, northern Queensland, Australia, November 2-10, 1938, R. G. Wind (Papuan-Australian Expedition).

*Conops (Asiconops) satanicus* Bigot

*Conops satanicus* Bigot, Ann. Soc. Ent. France, ser. 6, vol. 7, p. 43, 1887.

This species is aberrant in having the sides of the abdomen nearly parallel. The second to fifth tergites are of about equal width. Also the coloration resembles that of the following genus rather than *Asiconops*.

MATERIAL EXAMINED: Yanchep, 32 miles north of Perth, Western Australia, Nov. 13-23, 1935, R. E. Turner, 1 male, BMNH.

*Australoconops*, new genus

Type species, *Conops splendidus* Kröber.

Similar to *Conops*, but having an ocellar tubercle with ocelli, and having a relatively short and narrow second abdominal segment particularly in the male.

The second abdominal segment in the male is typically about half the greatest width of the abdomen. It is as long as the fourth segment and shorter than or as long as the third segment. In typical *Conops*, the second abdominal segment of the male is more than half

of the greatest width of the abdomen, as long or longer than the third segment, and longer than the fourth segment.

This genus contains species with a smooth or grooved front, but those with a grooved front do not have the projection on the sixth tergite of the female as is present in the subgenus *Asiconops*.

Two other genera differ from *Conops* by having an ocellar tubercle: *Physononops*, which has an elongated narrow second abdominal segment, and *Siniconops*, which has a spindle shaped abdomen in the male and a cylindrical abdomen in the female.

### Key to the Species of *Australoconops*

- |     |                                                                                                                                                                     |                              |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| 1.  | Second tergite entirely black (Australia, ♀) . . . <b>pseudocellifer</b> (Kröber) <sup>7</sup>                                                                      | 2                            |
|     | Second tergite with pollinose band . . . . .                                                                                                                        | 2                            |
| 2.  | Third tergite entirely black . . . . .                                                                                                                              | 3                            |
|     | Third tergite with band; restricted to sides in the female . . . . .                                                                                                | 7                            |
| 3.  | Face yellow . . . . .                                                                                                                                               | 4                            |
|     | Face black, with a yellow area on each side of the grooves . . . . .                                                                                                | 6                            |
| 4.  | Second tergite entirely gold red. Larger 14-16 mm. (Australia, ♂ ♀) . . . <b>aurous</b> (Newman) <sup>8</sup>                                                       |                              |
|     | Second tergite broadly black anteriorly. Smaller 7-10 mm. . . . .                                                                                                   | 5                            |
| 5.  | Front smooth. Sixth tergite nearly entirely yellow pollinose. No yellow mark anterior to scutellum (Australia, ♂ ♀) . . . <b>unicinctus</b> (Kröber)                |                              |
|     | Front transversely grooved. Sixth tergite broadly black anteriorly. Yellow mark anterior to scutellum (eastern Australia, ♂ ♀) . . . <b>bridwelli</b> , new species |                              |
| 6.  | Abdominal bands whitish yellow (Tasmania, ♂) . . . <b>picus</b> (Macquart) <sup>9</sup>                                                                             |                              |
|     | Abdominal bands reddish gold (Australia, ♀) . . . <b>inglorior</b> (Walker) <sup>10</sup>                                                                           |                              |
| 7.  | Abdomen with yellow on fourth segment (New South Wales, ♂) . . . <b>pulcher</b> , new species                                                                       |                              |
|     | Abdomen entirely black on fourth segment. . . . .                                                                                                                   | 8                            |
| 8.  | Face yellow . . . . .                                                                                                                                               | 9                            |
|     | Face black with a yellow area on each side of the grooves . . . . .                                                                                                 | 11                           |
| 9.  | Front smooth . . . . .                                                                                                                                              | 10                           |
|     | Front transversely grooved (eastern Australia, ♂ ♀) . <b>similis</b> , new species                                                                                  |                              |
| 10. | Legs partly reddish (eastern Australia, ♂ ♀) . . . . <b>splendidus</b> (Kröber)                                                                                     |                              |
|     | Legs black (western Australia, ♀) . . . . .                                                                                                                         | <b>aptatus</b> (Walker)      |
| 11. | Pollen deep gold red (western Australia, ♂) . . . . <b>perbellum</b> (Kröber) <sup>11</sup>                                                                         |                              |
|     | Pollen gold yellow . . . . .                                                                                                                                        | 12                           |
| 12. | Fifth tergite black. Sixth tergite with round gold mark in the male (western Australia, ♂ ♀) . . . . .                                                              | <b>aequatus</b> (Walker)     |
|     | Fifth tergite with gold pollinose crescent. Sixth tergite nearly entirely gold pollinose (New South Wales, ♂) . . . . .                                             | <b>sydneyi</b> , new species |

<sup>7</sup> *Conops pseudocellifer* Kröber, Ann. Mag. Nat. Hist., ser. 11, vol. 4, p. 601, 1939.

<sup>8</sup> *Conops aurosa* Newman, The Entomologist (London), vol. 1, p. 222, 1841.

<sup>9</sup> *Conops pica* Macquart, Diptères exotiques, suppl. 4, p. 161, 1851.

<sup>10</sup> *Conops inglorior* Walker, List of the specimens of dipterous insects in the collection of the British Museum, vol. 3, p. 676, 1849.

<sup>11</sup> *Conops perbellum* Kröber, Ann. Mag. Nat. Hist., ser. 11, vol. 4, p. 601, 1939.



*Australoconops uncinatus* (Kröber)

*Conops uncinatus* Kröber, Ann. Mag. Nat. Hist., ser. 11, vol. 4, p. 603, 1939.

The specimens recorded here differ from the description of the male mainly by having the fifth tergite entirely gold-yellow pollinose except for some black at the lateral margins. The facial grooves vary from almost yellow to mainly black. Length  $6\frac{1}{2}$  to 8 mm.

MATERIAL EXAMINED: Brisbane, Queensland, Mar. 3, 1914, H. Hacker, Baker collection, 1 male, USNM. Gunbower, Victoria, Mar. 3, 1933, 1 male, author's collection ex BMNH. Dedari, 40 miles west of Coolgardie, Western Australia, Jan. 11-21, 1936, R. E. Turner, 1 male, BMNH.

*Australoconops bridwelli*, new species

DESCRIPTION: Male: Length 10 mm. Front dark reddish brown, transversely grooved. Vertex slightly darker. Face dark yellow. Cheeks and adjacent face dark reddish black. Grooves black above, dark yellowish below. Keel yellow, black at base. Gold pollinose area on anterior orbit at front and on the parafacial. White pollinose on posterior orbit and lower facial grooves. Antennae dark reddish brown. Dark yellow on first segment and lower part of third segment. First segment five times as long as wide. Second segment nearly two times as long as first. Third segment as long as first. Arista black, second segment slightly produced. Proboscis dark yellow distally, black basally,  $1\frac{1}{4}$  times length of head. Occiput black.

Thorax black, gold pollinose on humeri and the adjacent dorsum medially, anterior to the scutellum, and on the metapleura. Thinly yellow pollinose on the postnotum and pleura. Coxae dark reddish, yellow pollinose. Legs rufous, diffusely black on basal half of the femora. More pollinose on tibiae and tarsi. Wings hyaline. Dark brown pattern between costa and fifth vein. Partly hyaline in apical half of first posterior cell and discal cell. Calypters yellow. Halteres yellow, dark brown at base.

Abdomen black, very faintly yellow pollinose. Gold pollinose on distal two-thirds of second segment and much of the fifth segment. Fifth segment black on anterior and posterior margins and sides. Sixth segment with a large circular gold pollinose mark projecting to a point anteriorly. Genitalia black.

Female: Length 8 mm. Similar to the male. Proboscis more blackish and somewhat longer. Gold pollinose areas on thorax and abdomen somewhat reddish (possibly due to staining). Abdomen black on fifth segment. Gold pollinose crescent shaped mark on sixth segment. Circular pollinose area on seventh segment. Seventh

segment mainly dark reddish. Genitalia black and dark reddish. Theca  $1\frac{1}{2}$  times as long as wide, dark reddish.

VARIATION (in paratypes): Length 8 to 9 mm. Cheeks sometimes partly reddish. Proboscis  $1\frac{1}{4}$  to  $1\frac{1}{2}$  times length of head. Front near antennae partly black. Yellow of face more restricted and dark areas more extensive in one male.

Types: Holotype, male, USNM 64917. Allotype, USNM, Stradbroke Island, Queensland, September 20, 1915, J. C. Bridwell. Paratypes, Queensland: 1 male, author's collection ex USNM, same data as holotype; 1 male, USNM, Stradbroke Island, Feb. 10, 1911, H. Hacker; New South Wales: 1 female, author's collection ex USNM, Sydney, Bridwell collection.

*Australoconops pulcher*, new species

DESCRIPTION: Male: Length 11 mm. Head reddish yellow. Front transversely grooved. Center of vertex including the tubercle and facial grooves dark shiny black. Facial keel entirely yellow. T pattern on front and cheeks blackish brown. Occiput black. Posterior orbit dark reddish yellow. Orbits and lower facial grooves yellow white pollinose. First antennal segment black, four times as long as wide. Remainder of antennae and proboscis missing.

Thorax black, reddish gold pollinose on humeri and adjacent dorsum, narrowly separated from a similar distinct pleural stripe. Triangular mark anterior to the scutellum and metapleura reddish gold pollinose. Indistinct yellow pollinose on dorsum and postnotum. Indistinct white pollinose on pleura. Coxae mainly black, white pollinose. Legs rufous, diffusely black on basal half of femora. Wings hyaline, with brown pattern between first and third veins and vena spuria and along fifth vein. Calypters grayish white. Halteres yellow, dark brown at base.

Abdomen black, reddish gold pollinose on second, third, and fifth segments, except for margins and sides. Sixth segment entirely reddish gold pollinose except on sides. Fourth segment reddish gold pollinose on distal margin, in midline, and to each side. Seventh segment shiny dark reddish yellow. Genitalia black.

TYPE: Holotype, male, USNM 64918, Sydney, New South Wales, Bridwell collection.

*Australoconops similis*, new species

DESCRIPTION: Male: Length 8.5 mm. Vertex and front dark reddish black. Front transversely grooved. Face and keel dark yellow. Cheeks dark reddish black. Facial grooves mainly black. Occiput black above, dark reddish below. Orbits and a postvertical mark gold pollinose. Antennae dark reddish, rufous on most of third

segment. Black on first segment and arista. First segment three times as long as wide. Second segment twice length of first. Third segment little longer than first. Second segment of arista moderately produced. Proboscis black,  $1\frac{1}{2}$  times length of head.

Thorax black, gold pollinose on humeri and dorsum medial to the humeri. This area joins a similarly colored distinct pleural stripe. Narrow margin anterior to the scutellum and a large area of the metapleura gold pollinose. Coxae dark reddish black, yellow pollinose. Femora dark reddish black, paler at apex and base. Tibiae mainly yellow and partially gold pollinose. Tarsi yellow with dark margin. Wings hyaline with dark brown pattern from costa to fifth vein. Hyaline in posterior half of first posterior cell and apical half of discal cell. Calypters yellow. Halteres yellow, brown at base.

Abdomen black, partly dark reddish on first, second, and seventh segments. Gold pollinose band on distal half of second and third segments produced slightly in midline. Sixth segment with a large gold pollinose circular area. Genitalia mainly black.

Female: Length 8 mm. Similar to male. Third tergite with yellow band narrower and confined to the sides. Sixth segment dark reddish black with a half moon shaped gold pollinose mark. Theca dark reddish, nearly  $1\frac{1}{2}$  times as long as wide.

VARIATION (in paratypes): Length 8.5 to 11 mm. Dark reddish areas darker on cheeks, lower occiput, and femora and brown in the first posterior and discal cells less extensive in the male.

TYPES: Holotype, male, USNM 64919, Stradbroke Island, Queensland, Sept. 20, 1915, J. C. Bridwell. Allotype, USNM, Sydney, New South Wales, Bridwell collection. Paratypes, 1 male, 1 female, author's collection ex USNM, Sydney, New South Wales, Bridwell collection.

*Australoconops splendidus* (Kröber)

*Conops splendidus* Kröber, Arch. Naturg., vol. 81, Abt. A, Heft 7, p. 63, 1915.

The cotype is 9 mm. long (without antenna, as are all of my measurements of the length). Kröber gave the length as 10 to 11 mm. The other specimens are 8 to 9.5 mm. long. None of the specimens have a white pollinose mark anterior to the transverse suture.

MATERIAL EXAMINED: Herberton, Queensland, Jan. 12, 1910, F. P. Dodd, 1 male, cotype, USNM. Sydney, New South Wales, Bridwell collection, 7 males, 1 with abdomen missing, 1 female, USNM author's collection and BMNH. Mittagong, New South Wales, Dec. 14, 1900, W.W.F., 1 male, USNM.



*Australoconops aptatus* (Walker)

*Conops aptata* Walker, List of the specimens of dipterous insects in the collection of the British Museum, vol. 3, p. 675, 1849.

The first specimen listed is 12 mm. long. The other is 15 mm.

MATERIAL EXAMINED: Western Australia, 1 female, author's collection ex BMNH. Yallingup near Cape Naturaliste, south Western Australia, Sept. 14 to Oct. 31, 1913, R. E. Turner, 1 female (determined by Brunetti), BMNH.

*Australoconops aequatus* (Walker)

*Conops aequata* Walker, List of the specimens of dipterous insects in the collection of the British Museum, vol. 3, p. 675, 1849.

*Conops piceus* Bigot, Ann. Soc. Ent. France, ser. 6, vol. 7, p. 43, 1887.

Kröber called the female *aequatus* and the male *piceus*.

MATERIAL EXAMINED: Yallingup near Cape Naturaliste, south Western Australia, Sept. 14 to Oct. 31, 1913, Nov. 1913, R. E. Turner, 8 males, 8 females (1 male and 2 females determined as *aequatus* by Brunetti, 1 male determined as *piceus* by Kröber), BMNH, author's collection, and USNM. Dongarra, Western Australia, Sept. 6-19, 1935, R. E. Turner, 1 male, 1 with abdomen missing, BMNH.

*Australoconops sydneyi*, new species

DESCRIPTION: Male: Length 8 mm. Head black. Vertex except tubercle dark reddish. An area on the face on each side of facial grooves yellow. Anterior orbit gold pollinose; posterior orbit and lower facial grooves white pollinose. Antennae black, rufous at base of third segment. First segment three times as long as wide. Second segment nearly two times as long as first. Third segment  $1\frac{1}{2}$  times length of first. Second segment of arista slightly produced. Proboscis black,  $1\frac{1}{2}$  times length of head.

Thorax black. Gold pollinose on humeri and adjacent dorsum which connects with a white pollinose pleural stripe. Metanotum partly white pollinose. Coxae dark reddish black, yellow white pollinose. Femora, apices of tibiae, and distal tarsi black. Most of tibiae yellow and gold pollinose. Proximal tarsi, pulvilli, and claws except black tips dark yellow. Wings hyaline. Brown pattern from costa to fifth vein, paler in costal cells. Hyaline in posterior half of first posterior cell and distal half of discal cell. Calypters yellow. Halteres yellow, brown at base.

Abdomen black. Gold pollinose on second segment except for anterior one fourth, on third segment except for anterolateral triangle, in a crescent shaped area on the fifth segment, and on most of the sixth segment. Seventh segment and genitalia shiny reddish black.

TYPE: Holotype, male, USNM 64920, Sydney, New South Wales, Bridwell collection.

**Genus *Microconops* Kröber**

*Microconops* Kröber, Arch. Naturg., vol. 81, Abt. A, Heft 1, p. 77, 1915.

***Microconops ater*, new species**

DESCRIPTION: Male: Length 7 mm. Front and ocellar tubercle black. Vertex dark reddish yellow. Face and upper keel yellow. Lower keel and parts of the grooves black. Occiput black above, yellow below. Orbit and lower facial grooves white pollinose. Antennae black, lower half of third segment dark yellow. First segment two times as long as wide. Second segment  $1\frac{1}{2}$  times length of first. Third segment nearly four times length of first. Arista two segmented, basal segment very slightly produced. Proboscis black,  $1\frac{1}{2}$  times length of head.

Thorax black. White pollinose mark at humeri connected with a similar pleural stripe. Some white pollen on postnotum and metapleura. Coxae and legs dark reddish black. Basal half of tibiae yellow. Wings brownish hyaline, without pattern. Calypters yellowish white. Halteres yellow, brown at base.

Abdomen black, dull on first four segments, shiny on fifth and sixth segments. Distal narrow white pollinose margin on first or third segments. Faintly white pollinose on sixth segment. Genitalia shiny blackish red.

VARIATION (in paratypes): Length 6.5 to 7 mm. Antennae dark brown instead of black in one male. Other dark areas on legs more brownish. Dark areas of abdomen more brownish in the other male so that the sixth segment is entirely dark reddish brown.

TYPES: Holotype, male, USNM 64921, Sydney, New South Wales, Bridwell collection. Paratypes, 2 males, USNM and author's collection, same data.

REMARKS: This species keys out to *nigrithorax*, which differs by having the antennae deep black and the front reddish yellow.

***Microconops brunnicornis* Kröber**

*Microconops brunnicornis* Kröber, Ann. Mag. Nat. Hist., ser. 11, vol. 5, p. 78, 1940.

This species was described from a single female from southwestern Australia. The male is similar but blacker, and the distal half of the posterior femora are mainly black. The male abdomen is dull black on the first four segments and shiny on the fifth and sixth. White pollinose distal bands are present on segments two to four. The sixth segment is diffusely white pollinose. The genitalia are reddish. In the female the sixth and seventh abdominal segments are shiny.

MATERIAL EXAMINED: Sydney, New South Wales, Bridwell collection, 2 males, 1 female, USNM and author's collection.

*Microconops fasciatus* Kröber

*Microconops fasciatus* Kröber, Arch. Naturg., vol. 81, Abt. A, Heft 1, p. 79, 1915.

In the specimens examined the second antennal segment is about  $1\frac{1}{2}$  times the length of the first, and the third segment about two times the length of the first. Size 5 to 5.5 mm long.

MATERIAL EXAMINED: Palmerston (Darwin), Northern Territory, November, 1 male and 1 female (in coitus), USNM, cotypes. Don-garra, Western Australia, Sept. 6-19, 1935, R. E. Turner, 1 male, BMNH.

*Microconops ornatus* Kröber

*Microconops ornatus* Kröber, Arch. Naturg., vol. 81, Abt. A, Heft 1, p. 78, 1915.

Two lateral ocelli are distinguishable on the ocellar tubercle. Length 6.5 mm.

MATERIAL EXAMINED: Redlynch, northern Queensland, Aug. 10-17, 1938, R. G. Wind, Papuan-Australian Expedition, 1 male, BMNH.

*Microconops rufafemoris*, new species

DESCRIPTION: Male: Length 9 mm. Most of the head black. Upper margin of front dark reddish black. Vertex, upper facial grooves and keel, and a small adjacent area on the face yellow. Orbits white pollinose. Antennae dark brown. Third segment predominantly rufous. Blackish on arista and distal medial part of third segment. First segment three times as long as wide. Second segment  $1\frac{1}{3}$  times length of first. Third segment over two times length of first. Process on second segment of arista small. Third segment of arista globular at base. Proboscis black,  $1\frac{1}{3}$  times length of head.

Thorax dull black, faintly yellow pollinose on dorsum more distinct on the humeri, scutellum, upper postnotum, and metanotum. Posterior half of scutellum dark reddish yellow. Pleura faintly white pollinose. Coxae black, white pollinose. Femora rufous with a black ring at base. Tibiae dark brown, yellow on basal half. Tarsi dark brown, partly yellow on proximal segments. Wings brownish hyaline. A small blackish mark at the anterior cross vein. Brownish pattern in apical half of wing between second vein and vena spuria and along the fifth vein. Calypters brownish yellow. Halteres yellow, brown at base.

Abdomen predominantly dull black. Yellow pollinose on distal second and third segments and most of the sixth segment. Abdomen narrowest at junction of second and third segments, widest at fifth and sixth segments where it is nearly three times as wide as the narrowest part.

TYPES: Holotype, male, USNM 64922, Sydney, New South Wales, Bridwell collection.

REMARKS: This species is rather distinctive, and differs from the other members of the genus by having rufous on the femora and antennae and a patterned wing.

### Genus *Paraconops* Kröber

*Paraconops* Kröber, Arch. Naturg., vol. 81, Abt. A, Heft 1, p. 74, 1915.

#### *Paraconops turneri*, new species

DESCRIPTION: Male: Length 8.5 mm. Head yellow, slightly blackish on cheeks and lower occiput. Black on the ocellar tubercle, the midline of the transversely grooved front, in the middle of the facial grooves, on most of the keel, and on the upper occiput. Antennae black, rufous on most of third segment and distal margin of second segment, partly dark yellow on first segment. First segment about  $2\frac{1}{2}$  times as long as wide. Second segment as long as first. Third segment slightly over two times length of first. Arista three segmented; process on second segment moderate. Proboscis black, nearly two times length of head.

Thorax black, faintly white pollinose. Scutellum and part of the posterior calli rufous. Coxae reddish black, faintly white pollinose. Femora and tibiae rufous. Femora black at basal one-third to one-fourth. Tarsi mostly blackish. Wings hyaline without pattern, somewhat yellowish at base. Calypters yellow. Halteres yellow, brown at base.

Abdomen dull black, faintly white pollinose more distinct on the sixth segment. Second and third segments rufous. Genitalia reddish black.

TYPE: Holotype, male, BMNH, Southern Cross, Western Australia, January 10-22, 1936, R. E. Turner.

#### *Paraconops aristalis*, new species

DESCRIPTION: Female: Length 5.5 mm. Head yellow, slightly blackish on cheeks and lower occiput. Black on the ocellar tubercle, a broad midline on the transversely grooved front, on the lower half of facial keel and adjacent grooves, and on the upper occiput. Antennae dark brown, blackish on upper distal part of first segment, basal half of second segment, upper part of third segment, and on arista. Reddish yellow on lower half of third segment. First segment  $2\frac{1}{2}$  times as long as wide. Second segment as long as first. Third segment over two times length of first. Arista two segmented, process of basal segment small. Proboscis black, over two times length of head.

Thorax black, faintly white pollinose, more distinct on humeri and metapleura. Scutellum rufous. Coxae dark reddish black, faintly

white pollinose. Legs dark reddish, darker on upper margin of femora, distal tibiae, and tarsi. Wings hyaline, reddish yellow at base. Calypters yellowish white. Halteres yellow, brown at base.

Abdomen black, faintly white pollinose on distal segments and at junctions of first and second and second and third segments. Rufous on anterior and posterior margins and sides of second segment, posterior margin of first segment, and anterior margin of third segment. Theca black, longer than wide.

TYPE: Holotype, female, BMNH, Perth, Western Australia, January 26–28, 1936, R. E. Turner.

REMARKS: This species has many similarities with the previous one, so that I might have considered the color differences due to sex and the size difference due to extremes of variation; however, this species has only two arisal segments.

### Genus *Neoconops* Kröber

*Neoconops* Kröber, Arch. Naturg., vol. 81, Abt. A, Heft 1, p. 75, 1915.

#### *Neoconops robustus* Kröber

*Neoconops robustus* Kröber, Ann. Mag. Nat. Hist., ser. 11, vol. 5, p. 66, 1940.

Previously known only from the type female. This male has the first three tergites dull reddish black (seemingly grease stained). The fourth tergite is more black and partly shining. The fifth and sixth tergites are shiny bluish black. The sixth tergite is partly white pollinose. The genitalia are partly shiny red. The abdomen is cylindrical with no narrowing at the base. Length 7 mm.

MATERIAL EXAMINED: Mingenew, Western Australia, Oct. 15–22, 1935, R. E. Turner, 1 male, author's collection ex BMNH.

### Genus *Heteroconops* Kröber

*Heteroconops* Kröber, Arch. Naturg., vol. 81, Abt. A, Heft 1, p. 80, 1915.

#### *Heteroconops antennatus* Kröber

*Heterconops antennatus* Kröber, Ann. Mag. Nat. Hist., ser. 11, vol. 5, p. 69, 1940.

This species is otherwise known only from the type male. This female differs somewhat and may represent another species. The upper front is partly reddish. The third antennal segment is somewhat shorter and wider than the illustration. The sixth and seventh tergites are shiny, the others are dull. The theca is yellowish, darker apically, and longer than wide. There are no accessory veins on the wings.

MATERIAL EXAMINED: Mingenew, Western Australia, Oct. 15–22, 1935, R. E. Turner, 1 female, BMNH.



*Heteroconops curticornis* Kröber

*Heteroconops curticornis* Kröber, Ann. Mag. Nat. Hist., ser. 11, vol. 5, p. 69, 1940.

Previously known only from the type female. This specimen differs in having the third antennal segment not quite as short and wide as the illustration. Length 4.5 mm. Tergites one to four dull, five and six shiny. No accessory wing veins. This specimen is very close to the previous one, and I would have considered them conspecific were it not for the presence of the ocellar tubercle.

MATERIAL EXAMINED: Dongarra, Western Australia, Aug. 13-22, 1935, R. E. Turner, 1 male, author's collection ex BMNH.

*Genus Physocephala* Schiner

*Physocephala* Schiner, Wiener Ent. Monatschr., vol. 5, p. 137, 1861.

*Physocephala minuta* Kröber

*Physocephala minuta* Kröber, Arch. Naturg., vol. 81, Abt. A, Heft 4, p. 131, 1915.

Previously known only from the male cotypes. The female has yellow pollinose distal margins on the first five tergites, widest and more golden yellow on tergites three and four. The sixth tergite is mainly yellow pollinose. The seventh tergite is shiny reddish brown, yellow pollinose dorsally. The theca is longer than wide, shiny reddish brown, blackish at the apex. The black of the facial grooves is restricted to two small marks in the middle. The male has the third and fourth veins fused at the site of the anterior cross vein so that this vein is absent.

MATERIAL EXAMINED: Kuranda, Queensland, F. P. Dodd., C. J. Wainwright collection, 1 male, 1 female, author's collection and BMNH.

*Physocephala australiana*, new species

DESCRIPTION: Male: Length 8 mm. Head yellow. Vertex, upper front, and occiput black. Orbitals white pollinose. Antennae brown, yellowish on first antennal segment and ventral inner surfaces of second and third segments. First antennal segment  $2\frac{1}{2}$  times as long as wide. Second segment  $2\frac{1}{2}$  times length of first. Third segment a little longer than the first. Proboscis black, about two times length of head.

Thorax black, faintly white pollinose. Humeri and upper half of pleura rufous. White pollinose area adjacent to the humeri extending into a distinct white pollinose pleural stripe. White pollinose on upper postnotum and metapleura. Apex of scutellum with a small indistinct rufous spot. Coxae black, white pollinose. Legs rufous, partly brownish in upper middle of femora and on the tarsi. Wings

hyaline, blackish between first and third veins becoming paler in submarginal cell beyond apex of second vein. Calypters yellow. Halteres yellow, brown at base.

Abdomen rufous on second, third, and sixth segment, on lateral distal margin of fourth segment, and on distal margin of fifth segment. Remaining parts of abdomen black, faintly white pollinose. Distinct white pollinose at junction of first and second segments and at distal margin of second, third, and fourth segments. Sixth segment indistinctly yellow pollinose. Genitalia shiny black, partly reddish.

VARIATION (in paratype): Length 6 or 6.5 mm. (head missing). Similar to type. Apex of submarginal cell beyond level of posterior crossvein hyaline. Darkened again at tip of submarginal cell. Scutellum entirely black. Most of pleura black. Posterior femur broadly black in the middle. Dorsum of second and third abdominal segments partly blackish.

Types: Holotype, male, BMNH, Yanchep, 32 miles north of Perth, Western Australia, January 9-23, 1936, R. E. Turner. Paratype, 1 male, author's collection ex BMNH, Dedari, 40 miles west of Coolgardie, Western Australia, January 11-21, 1936, R. E. Turner.

REMARKS: This species is characterized by having the wing pattern confined to the area between the first and third veins, the remainder of the wing being hyaline.

### Genus *Thecophora* Ronadani

*Thecophora* Ronadani, Nuovi Ann. Sci. Nat. Bologna, ser. 2, vol. 3, p. 15, 1845.  
*Occemya* Robineau-Desvoidy, Bull. Soc. Sci. Yonne, vol. 7, p. 130, 1853.

#### *Thecophora papuana*, new species

DESCRIPTION: Female: Length 5.5 mm. Front and middle of vertex dark rufous. Dull black on upper sides of occiput and sides of vertex. Ocellar tubercle shiny black. Ocelli shiny rufous. Face dark yellow, partially blackish on the cheeks. Occiput blackish, dark yellow on lower third. Orbits white pollinose. Antennae dark brown, rufous on first segment and basal half of medial surface of third segment. Remainder of third segment and arista black. Second antennal segment yellowish below. First segment as long as wide. Second segment two times length of first. Third segment same length as second. Proboscis blackish, distal segments each about equal to head length.

Thorax blackish brown, paler and white pollinose on the pleura. Coxae dark brown, white pollinose. Anterior coxa more yellowish. Legs dark brown. Base of femora yellowish, occupying about the basal third of posterior femur on the lateral surface. Femora narrowly yellowish at the base. Distal tarsi nearly black. Claws mostly

black, yellowish at the base. Pulvilli dark yellow. Wings hyaline. First posterior cell open about half the length of anterior cross vein. Calypters brownish yellow. Halteres dark yellow, brown at base.

Abdomen dark brown, more yellowish on the sides. Distal white pollinose margins on all the segments becoming broader on the sides of second and third segments. Theca blackish brown, a little shorter than wide. Genitalia brownish black.

TYPE: Holotype, female, BMNH, Mount Tafa, Papua, 8,500 ft., March 1934, L. E. Cheesman.

REMARKS: This is the second species of the genus now known from the Australasian region. This species is characterized by its diffusely brownish coloration, the black areas being brownish, and the light colored areas relatively dark.

*Thecophora australiana* (Camras)

*Occemyia australiana* Camras, Ent. News, vol. 66, p. 124, 1955.

Two additional specimens have turned up in the collection. This species is distinctive in having an unusually large amount of white pollen on the thorax.

MATERIAL EXAMINED: Como, New South Wales, Dec. 1923, H. Petersen (flower sweepings), 2 males, USNM and author's collection.